Modtaget
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PVS

CLAIMS

1. A pharmaceutical composition for parenteral administration, which comprises a peptide and dimethyl sulfone.

2. A pharmaceutical composition according to claim 1, wherein the amount of dimethyl sulfone is of from 40 to 400 mM.

3. A pharmaceutical composition according to claim 2, wherein amount of dimethyl sulfone is of from 125 to 350 mM.

4. A pharmaceutical composition according to any one of the claims 1 to 3, wherein the composition is a solution.

5. A pharmaceutical composition according to any one of the claims 1 to 3, wherein the composition is a suspension.

6. A pharmaceutical composition according to any one of the preceding claims, which is suitable for administration by injection or infusion.

7. A pharmaceutical composition according to claim 6, which is suitable for subcutaneous administration.

8. A pharmaceutical composition according to claim 6, which is suitable for intramuscular administration.

9. A pharmaceutical composition according to claim 6, which is suitable for intravenous administration.

10. A pharmaceutical composition according to any one of the preceding claims 1 to 5, which is suitable for pulmonal administration.

11. A pharmaceutical composition according to any one of the preceding claims 1 to 5, which is suitable for ophthalmic administration or topical administration.

12. A pharmaceutical composition according to any one of the preceding claims, wherein the peptide is human growth hormone, GLP-1, GLP-2, insulin, Factor VII, Factor VIII, erythropoeitin (EPO), glucagon, interleukin, such as interleukin-2 (IL-2), interferon-α or interferon-β, or an analogue thereof, or a derivative of any such peptide or analogue.

13. A pharmaceutical composition according to claim 12, wherein the peptide is human insulin or an analogue thereof, or a derivative of human insulin or the human insulin analogue.

14. A pharmaceutical composition according to claim 13, wherein the peptide is human insulin.

15. A pharmaceutical composition according to claim 13, wherein the peptide is Asp(B28)-human insulin.

16. A pharmaceutical composition according to claim 13, wherein the peptide is Lys(B28) Pro(B29)-human insulin.

17. A pharmaceutical composition according to claim 13, wherein the peptide is Lys(B3) Glu(B29)-human insulin.

18. A pharmaceutical composition according to claim 13, wherein the peptide is $N^{\varepsilon B29}$-tetradecanoyl des (B30)-human insulin.

19. A pharmaceutical composition according to claim 13, wherein the peptide is Gly(A21) Arg(B31) Arg(B32)-human insulin.

20. A pharmaceutical composition according to claim 13, wherein the peptide is $N^{\varepsilon B29}$–litocholoyl-γ-glutamyl des (B30)-human insulin.

21. A pharmaceutical composition according to claim 12, wherein the peptide is Gly(8)-human GLP-1.

22. A pharmaceutical composition according to claim 12, wherein the peptide is Arg(34), N-ε-(γ-Glu(N-α-hexadecanoyl))-Lys(26)-human GLP-1(7-37)OH.

23. A pharmaceutical composition according to claim 12, wherein the peptide is Gly(2)-human GLP-2.

24. Use of dimethyl sulfone as an isotonicity agent in a pharmaceutical composition for parenteral administration.

25. Use of dimethyl sulfone as an isotonicity agent in a pharmaceutical composition for parenteral administration comprising a peptide.

26. Use according to claims 24 or 25, wherein the amount of dimethyl sulfone in the pharmaceutical composition is of from 40 to 400 mM.

27. Use according to claim 26, wherein the amount of dimethyl sulfone in the pharmaceutical composition is of from 125 to 350 mM.

28. Use according to any one of the claims 24 to 27, wherein the composition is a solution.

29. Use according to any one of the claims 24 to 27, wherein the composition is a suspension.

30. Use according to any one of the claims 24 to 29, wherein the composition is suitable for administration by injection or infusion.

31. Use according to claim 30, wherein the composition is suitable for subcutaneous administration.

32. Use according to claim 30, wherein the composition is suitable for intramuscular administration.

33. Use according to claim 30, wherein the composition is suitable for intravenous administration.

34. Use according to any one of the claims 24 to 29, wherein the composition is suitable for pulmonal administration.

35. Use according to any one of the claims 24 to 29, wherein the composition is suitable for ophthalmic administration or topical administration.

36. Use according to any one of the preceding claims 24 to 35, wherein the peptide is human growth hormone, GLP-1, GLP-2, insulin, Factor VII, Factor VIII, erythropoeitin (EPO), glucagon, interleukin, such as interleukin-2 (IL-2), interferon-α or interferon-β, or an analogue thereof, or a derivative of any such peptide or analogue.

37. Use according to claim 36, wherein the peptide is human insulin or an analogue thereof, or a derivative of human insulin or the human insulin analogue.

38. Use according to claim 37, wherein the peptide is human insulin.

39. Use according to claim 37, wherein the peptide is Asp(B28)-human insulin.

40. Use according to claim 37, wherein the peptide is Lys(B28) Pro(B29)-human insulin.

41. Use according to claim 37, wherein the peptide is Lys(B3) Glu(B29)-human insulin.

42. Use according to claim 37, wherein the peptide is $N^{\varepsilon B29}$-tetradecanoyl des (B30)-human insulin.

43. Use according to claim 37, wherein the peptide is Gly(A21) Arg(B31) Arg(B32)-human insulin.

44. Use according to claim 37, wherein the peptide is $N^{\varepsilon B29}$–litocholoyl-γ-glutamyl des (B30)-human insulin.

45. Use according to claim 36, wherein the peptide is Gly(8)-human GLP-1.

46. Use according to claim 36, wherein the peptide is Arg(34), N-ε-(γ-Glu(N-α-hexadecanoyl))-Lys(26)-human GLP-1(7-37)OH.

47. Use according to claim 36, wherein the peptide is Gly(2)-human GLP-2.